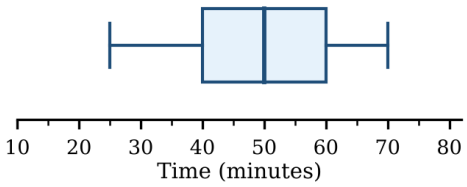
Day 66	A Level Maths: C Tier 10-a-day
1 Describe the single transformation that maps the graph of $y = f(x)$ onto the graph of $y = 3f(x)$.	
2 A cyclist travelling at 12 m s^{-1} brakes uniformly and comes to rest after travelling 36 m. (a) Find the deceleration. (b) Find the time taken to stop.	
3 Solve $x^2 - 4x - 9 = 0$, giving your answers in the form $p \pm \sqrt{q}$.	
4 Write down the exact values of (a) cosec 30° (b) cosec 210°	
5 Three forces $(-4\mathbf{i} + 5\mathbf{j})$ N, $(p\mathbf{i} + q\mathbf{j})$ N and $(\mathbf{i} + \mathbf{j})$ N act on a particle which is in equilibrium. $\mathbf{i}$ and $\mathbf{j}$ are perpendicular unit vectors. Find the values of p and q.	

Day 66 **A Level Maths: C Tier 10-a-day**

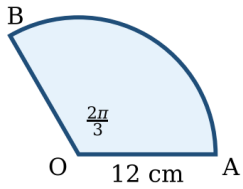
6 $f(x) = x^3 - 11x^2 + 38x - 40$
(a) Show that $(x - 4)$ is a factor of f(x).
(b) Factorise f(x) completely.

7 Use a double angle formula to find
$\int \sin 5x \cos 5x \, dx$.

8 The box plot summarises the delivery times, in minutes, of a pizza company.
Find the range and the interquartile range.



9 The diagram shows sector OAB of a circle.
Find, in terms of π, (a) the arc length AB, (b) the area of the sector.



10 The probability that a patient takes the drug is 0.6. If so, the probability that the patient recovers is 0.8; otherwise it is 0.2.
Given that the patient recovers, find the probability that a patient takes the drug.